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The generic position of *Smerinthus decoratus* Moore (Lepidoptera, Sphingidae)

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Abstract The generic position of *Smerinthus decoratus* Moore, 1872 is discussed. Most recently, the species has been included in *Marumba* Moore, a position that is no longer tenable in the light of new material and further investigation of its adult morphology. A new genus, *Morwennius*, is therefore erected for *S. decoratus*.

Key words *Morwennius*, *Marumba*, *Smerinthus*, *decoratus*, Sphingidae, Smerinthini, Oriental Region.

Introduction

Smerinthus decoratus Moore, 1872 was described from an unstated number of females from Sikkim, northern India. Butler (1876) transferred the species to *Triptogon*, then Kirby (1892) moved it to *Marumba*. Hampson (1893) treated it in *Cypa*, while Rothschild & Jordan (1903) included it, with reservations, in *Smerinthulus*. These latter authors (Rothschild & Jordan, 1907) later changed their minds and returned *decoratus* to *Marumba*. Subsequent authors were content to leave it in *Marumba*. Jordan (1929) noted that the type specimen(s) had been lost and that the only specimen then known was a female in the collection of the Tring Museum. Gehlen (1933) described a male from Laos as *Marumba decoratus indochinensis*. This subspecies was synonymised to nominotypical *decoratus* by Inoue *et al.* (1996). Most recently, Zhu & Wang (1997) described a female from Yunnan, China, as *Mimas strigfenestra*, which Kitching & Cadiou (2000) also synonymised with nominotypical *decoratus*. The species currently ranges from western Nepal (Allen, 1993) to southwest China and Laos, and south to Sumatra (Diehl, 1980).

D'Abrera (1987: [85]), figured the same female that was referred to by Jordan (1929), and which is now in The Natural History Museum, London (BMNH), although he incorrectly stated that it was a male. Recently, new material of both sexes has become available for study, much collected by the two junior authors in Nepal and Thailand, which has allowed us to reassess the generic placement of this species.

Discussion

Rothschild & Jordan (1903) produced the first systematic revision of the family Sphingidae, using a large number of structural characteristics. Previous descriptions of genera were generally based only on the shape and markings of the wings. Rothschild & Jordan (1903) also provided comprehensive keys for the identification of genera and species, based on a range of structures including head, antennae, legs, male external genitalia and (less extensively) female external genitalia. Subsequent authors have relied on the generic characteristics

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established by Rothschild and Jordan without significant further revision.

Although Rothschild & Jordan (1903: 302) placed *decoratus* in *Smerinthulus*, they did so tentatively, stating that they had seen only the original description (which described just the wing patterns) and a pencil sketch of the type specimen, which itself by this time was probably already lost. Rothchild & Jordan (1907) moved the species to *Marumba* without explanation. We consider it most likely that this change was made because Rothschild & Jordan had by then obtained the female mentioned by Jordan (1929), and were able to examine its antennae, head, legs and wing venation.

Marumba, *sensu* Rothschild & Jordan (1903), has a number of key features in the male genitalia and the forewing markings. The features relevant to the current discussion are as follows:

The valva is divided distally into a dorsal and a ventral lobe. The dorsal lobe is strongly sclerotized and apically pointed, while the ventral lobe is obliquely rounded and membranous. The lobes are close together and imperfectly separated. The harpe is a strongly sclerotized, upward curving hook. There is also a "basal fold of the clasper (which) is produced mediad into a plate which lies above the penis-sheath and is prolonged distad into a sharp process. . ." (Rothschild & Jordan, 1903). These structures are termed labides (Klots, 1970).

The forewing upperside has two submarginal lines that form a recumbent S-shaped curve around a double subtornal spot.

Also, although not mentioned by Rothschild & Jordan (1903), the uncus of the male genitalia in all true *Marumba* species is broadly spatulate and usually divided medially into two lobes.

However, *decoratus* has none of these features and so cannot be included in *Marumba*. *Marumba* species and *decoratus* do both have spines on the tibiae and only a single pair of hindtibial spurs. Tibial spines also occur in *Mimas* (used by Zhu & Wang (1997), for *strigfenestra*) but this genus has two pairs of hindtibial spurs. *Cypa* (used by Hampson (1893) for *decoratus*) likewise has two pairs of hindtibial spurs and additionally lacks tibial spines. Consequently, it is inappropriate to place *decoratus* in either of these genera.

In view of this analysis, we consider that the systematic position of *decoratus* can be correctly represented only by the erection of a new genus. This we do below, based on a number of morphological characters in the adult insect. We anticipate that further diagnostic characteristics for the genus will be found in the larval and pupal stages. However, apart from the first instar larva, of which there are specimens in the BMNH, the immature stages are unknown.

Description

Genus *Morwennius* nov.

Type species. *Smerinthus decoratus* Moore, 1872: 568. Gender masculine. Fig. 1. Male genitalia. Fig. 2. Adult ♂♀.

Superficially, this genus most closely resembles *Marumba*, with similar legs and cranial features. The midtibia is spinose and the hindtibia has a single pair of spurs. The foretibia does not end in a thorn. The proboscis is short, its two halves not conjoined but cross-

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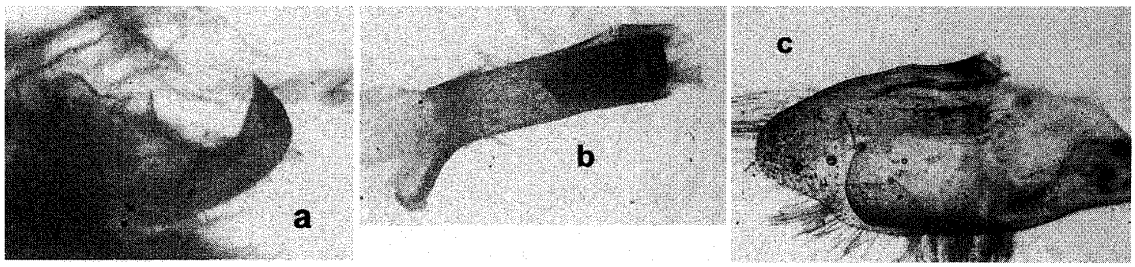

Fig. 1. *Morwennius decoratus*, comb. n. ♂ genitalia (a: uncus, latero-posterior view. b: phallus, lateral view. c: left valve, inside view).

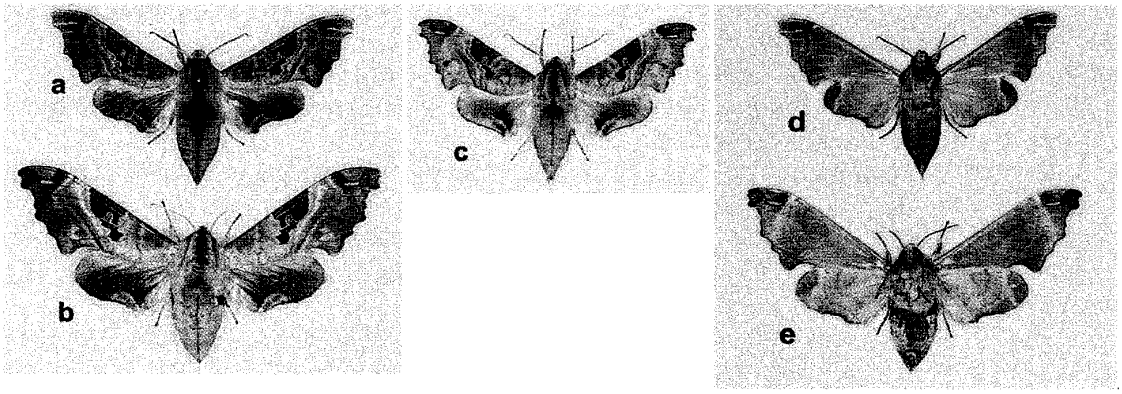

Fig. 2. *Morwennius decoratus*, comb. n. adults (a, b: ♂♀ upperside. Thailand. c: ♂ upperside. Nepal. d, e: ♂♀ underside. Thailand).

linked with a row of fine hairs. On the upper side of the forewing, the termen is crenulate. There is a broad submarginal area, inside which there are two pale postdiscal striae, which are only mildly sinuate and run parallel to the termen until they meet the dorsum about two-thirds of the distance from the base to the posterior of the termen.

The male genitalia differ markedly from *Marumba* in several key characters. The uncus is single, narrow, ends in a downcurved hook. The labides, typical of *Marumba*, are absent and the valves are not apically divided. The harpe is not hooked but a broadly rounded plate, with the ventral half developed as a sharp blade. The aedeagus has a terminal process on the left side that is produced as a strongly sclerotized, upwardly directed and pointed process. Similar prcesses occur in many other sphingid genera, but are notably absent in *Marumba*.

Etymology. Derived from an old Cornish word for morning. This reflects the now well-established flight period for the adult *decoratus*, which is active only during the period from 2.00 am to 5.00 am. The moth is attracted to light, but principally to the half-lit surrounding areas rather than to the brightly lit sheet close to the lamp.

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摘　　要

スズメガ科 *Smerinthus decoratus* Moore の分類学的地位と新属の設置 (Alan C. Cassidy, Michael G. Allen and Tony Harman)

Smerinthus decoratus Moore, 1872 は，ネパールから中国南部（雲南省），インドシナ，スマトラにかけて分布する中型のスズメガで，原記載以降その属の所属は確定しているとは言い難い．Rothschild & Jordan (1903) は暫定的に本種を *Smerinthulus* Huwe, 1895 に置いたが，後に *Marumba* Moore, 1882 に移し (Rothschild & Jordan, 1907)，この扱いが今日まで引き継がれている．*Marumba* では，♂交尾器 valva が端部で二分し，背域は強く骨化して先端が尖るほか，骨化して湾曲した harpe や labides を備え，また uncus はへら状で，通常先端は中央で切れ込むなどの特徴を示す．しかし，*decoratus* では，uncus は細くかぎ状に曲がり，valva は先端二分することなく，基部の labides も欠き，harpe は幅広の板状になる等，*Marumba* の特徴は何一つ見られない．脛節の刺列の状態では *Mimas* Hübner, 1819 に共通する部分もあるが，後脛節には 1 対の端距しか持たない点でこの属とも異なっている．本文では本種に対する新属 *Morwennius* を創設し，外部形態，♂交尾器等を再記載した．

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